Rail Event Recorder
Proposed Survivability Requirements

Crashworthiness Parameter	RSAC Draft Proposal	Light Rail/IEEE Standard	FRA Proposed Requirements
FIRE	● Thermal flux of 158 kW/m (50,000 Btu/ft/hour)for 60 minutes at a nominal 1000° C (1832° F). (heat source = flame) ● 260° C (500° F) for 10 hours.	● 650° C (1200° F) for 30 minutes, then 300° C (570° F) for 60 minutes, then 1100° C (212° F) for 5 hours.	● 750° C (1400° F) for 60 minutes (oven instead of flame). ● 260° C (500° F) for 10 hours. ● Initial temperature set at that of the open flame temperature of burning diesel fuel.
IMPACT SHOCK	● 23 Gs for 250 ms duration, same amount of "energy under the curve" - see Appendix to proposed rule with min 23 Gs is acceptable.	● 55 G peak, 100 ms duration, 1/2 sine crash pulse. 2.85 G-sec energy area under the curve, separately in the direction of each of the 3 principal axes.	● Use IEEE standard.
STATIC CRUSH	● 111.2 kN (25,000 lbf) applied continuously for 5 minutes. ● 445.5 kN (10,000 lbf) applied to a loading surface = 25% of the surface area of the largest face.	● 110 kN (25,000 lbf) for 5 minutes.	● Use IEEE standard.
FLUID IMMERSION	● Immerse sequentially for 48 hours each in the following: #1 diesel, #2 diesel, water, salt water, lube oil, fire fighting agent likely to cause damage (such as AFFF).	● Immersion in any of the following for 48 hours: #1 diesel or #2 diesel, water, salt water, lube oil and then in fire extinguishing fluid for 10 minutes, followed by an undisturbed 48-hour dryout.	● Use IEEE standard.
HYDROSTATIC PRESSURE	● Immersion in water at 46.62 psig (equivalent to a depth of 30.5 meters (100 feet)) at a nominal temperature of 25° C (77° F) for 48 hours.	● Immersion in salt water at a depth of 15 meters (50 feet) for 48 hours.	● Use IEEE standard.